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SCHOOL**

**MONTEREY, CALIFORNIA**

**THESIS**

**RELATIONSHIP BETWEEN TIMING OF MULTIPLE  
RETENTION BONUSES AND THE QUALITY OF  
OFFICERS RETAINED ON THE COST SAVINGS FOR  
THE NAVY**

by

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AND THE QUALITY OF OFFICERS RETAINED ON THE COST SAVINGS  
FOR THE NAVY**

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## **ABSTRACT**

The surface warfare community has recently increased bonus amounts in an attempt to reward quality performance and retain superior officers. Simultaneously, the community has started to offer alternative programs and incentives that might appeal to those officers who desire a flexible career. We used survey information to determine which of these were the most appealing to the community in a way that might provide cost savings to the military when provided in conjunction with an auction bonus system. Using the standard bonus system compared to the uniform price auction, the Quality Adjusted Discount (QUAD) auction, and Combinatorial Retention Auction Mechanism (CRAM), we determined which would be most effective for maintaining quality officers in the community while meeting retention objectives and providing cost savings.

We found that a quality auction system could provide cost savings as much as \$1,850,000 or could increase costs by as much as \$2,081,250, depending on community retention levels, even with increased individual bonus amounts. Additionally, from survey responses we were able to discern additional non-monetary incentives that surface warfare officers desire, which could be used to improve retention of quality officers in the future.

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## **LIST OF ACRONYMS AND ABBREVIATIONS**

BDOC	basic division officer course
CDO	command duty officer
CIP	career intermission program
CONUS	continental United States
CRAM	Combinatorial Retention Auction Mechanism
DH	department head
DHRB	department head retention bonus
EOOW	engineering officer of the watch
FITREP	fitness report
IRB	institutional review board
NMI	non-monetary incentives
NPS	Naval Postgraduate School
OOD	officer of the deck
QUAD	Quality Adjusted Discount
RJCSRB	Revised Junior Critical Skills Retention Bonus
SUWC	surface warfare coordinator
SWO	surface warfare officer
SWOCP	Surface Warfare Officer Continuation Pay
SWOS	Surface Warfare Officer School
USNA	United States Naval Academy
WTI	weapons tactics instructor
YG	year group

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## I. INTRODUCTION

### A. PURPOSE

The intent of this thesis is to identify past retention habits based on offered bonuses and propose a structure for bonuses in the future, regarding both the monetary amount and the year of service offered in an effort to retain the appropriate number of high-quality officers in the surface warfare community. Additionally, intangible incentives are examined and attempts made to quantify them for future considerations for retention.

The military faces a peculiar problem when maintaining skilled workers who have advanced through the ranks; unlike the civilian sector, the military cannot and does not use outside hiring techniques to compensate for retention problems within certain specialties and the management level. Rather, the military is forced to home-grow workers from the low rank, minimally trained level to the high rank, highly trained level. Because of this, retention in the military is aggressively tracked and mediated when necessary levels lag.

Typically, retention problems are countered by offering monetary bonuses that require extended periods of service obligation. In the last decade, however, the Department of the Navy and the surface warfare community in particular have explored non-monetary incentives as a means of enticing quality officers to remain on active duty. Programs such as career intermission programs, graduate education, and alternate timelines for training have been implemented.

While monetary bonuses remain a viable option for tempting surface warfare officers to stay within the community, the use of an auction system that takes into account a particular officer's quality and desire to participate in alternate incentive programs could provide cost savings to the community.

## **B. PROBLEM**

Recent polls have found that the surface warfare community is “seeing an uptick in lieutenants leaving at their first opportunity, driving a historically low retention rate of around 35% even lower, indicating that a significant amount of talent in the surface warfare community walks out the door immediately following their first shore tour” (Snodgrass, 2014). We distributed a survey to junior surface warfare officers (SWOs) from the rank of ensign to lieutenant to analyze what factors drove officers to either remain or leave active duty. Historical data provided insight as to the quality of officer that chose to take previous versions of retention bonuses.

The survey, distributed to current junior officers (both those who have taken retention bonuses and those who have not), asked participants to assess their personal valuation of non-monetary incentives and how it would change the amount they would bid for a monetary bonus in an auction system.

## **C. ORGANIZATION OF STUDY**

Chapter II focuses on background material for understanding the traditional SWO career path, and the alternatives that are being offered as non-monetary incentives. Chapter III provides a background of auction systems and the potential applications to SWO retention bonuses. Chapter IV shows the background of the officer retention survey that was distributed as part of this thesis. Chapter V is the analysis and results of both historical data and the survey results. Chapter VI summarizes and concludes with recommendations for further study.

## **II. BACKGROUND**

This chapter defines the typical surface warfare officer career. Section A explains timing and qualification for a typical officer, as well as recent changes implemented by the Navy. This examination will help ascertain what elements constitute a high-quality officer that the Navy should want to retain.

Section B discusses the monetary and non-monetary incentives offered during a career. The current system is explained, including the retention aims of the Surface Warfare community and if they are being met.

### **A. SURFACE WARFARE OFFICER CAREER AND QUALIFICATION**

When considering the career of a SWO, one must always start at the initial training phase; newly commissioned officers cannot start the career timeline at a later point, meaning that the Navy must home-grow all SWOs rather than hiring experienced civilians to fill high-level positions.

In an effort to determine which officers have the necessary qualifications to command a vessel later in their career, the Navy habitually evaluates performance and quality. Officers receive Fitness Reports (FITREPs) at least once every 15 months; either during the periodic month all members of their paygrade are reviewed, upon detachment from the command, or upon the detachment of the commanding officer (Chief of Naval Personnel, 2015, pp. 3-1 – 3-4). While all FITREPs have promotion recommendations, periodic and detaching of reporting senior FITREPs can provide additional comparison data, since officers of the same category are simultaneously ranked and have summary group information that individual scores can be viewed against.

FITREPs are comprised of multiple metrics, including a cumulative point average of categories, a narrative paragraph, and recommendations for future employment. Though guidance is provided in BUPERSINST 1610.10 (series) and PERS-41, the reporting senior has latitude when writing reports.

## **1. Career Progression and Milestones**

Due to the practical necessity of developing future commanding officers from within the SWO community junior officer ranks, standard wickets, as well as unofficial ones, are required to prepare SWOs for potential future command.

### ***a. Initial Officer Training***

Typically, newly commissioned SWOs report to their ships on an interim basis before proceeding to basic division officer course. This eight week course covers basic shipboard knowledge and qualifications, and is the Surface Warfare Officer School initial training.

### ***b. First and Second Division Officer Tours***

Following basic division officer course (BDOC), SWOs report to their ship to begin their 24 month tour as Division Officers. Officers are assigned to a division based on empty positions; few billets require specialty training, so officers slated for those positions proceed to specialty schools prior to or following BDOC.

During the first sea tour, officers are required to qualify SWO, including the prerequisite qualifications. The division officer job can be split into two aspects: divisional administration and watchstanding. Officers can pursue further qualification during their first sea tour, including Engineering Officer of the Watch (EOOW), Surface Warfare Coordinator (SUWC), or Command Duty Officer (CDO).

Officers attend advanced division officer course between their first and second division officer tours (see Figure 1). This four-week course of instruction standardizes knowledge and builds on the officer's initial tactical experience to prepare them for follow on sea tours.

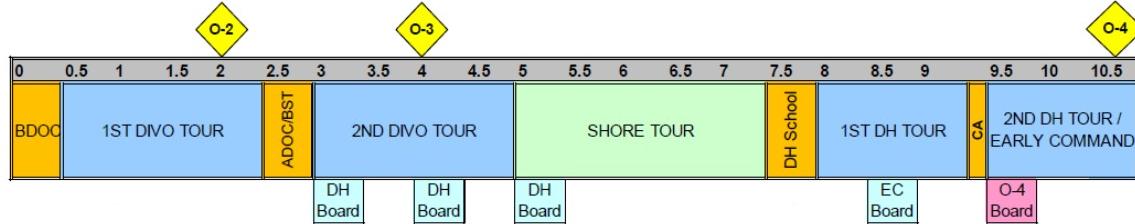


Figure 1. Legacy SWO Career Path. Source: Navy Personnel Command (2015).

Second tour division officers receive specialized training depending on their assigned second tour job. As more advanced watchstanders, they continue to hone their first tour skills while continuing to work on advanced qualifications.

#### *c. First Shore Tour*

SWOs slate for their shore duty during their last year of sea duty. Some shore duty jobs require signing a contract for the revised junior critical skills retention bonus (RJCSRB), committing to two department head tours in exchange for a bonus that is paid out over multiple years. Shore duty is often the first chance that officers have to work on graduate education.

#### *d. Department Head School*

Department head school is a combination of advanced tactics training in Dahlgren, Virginia, and a standard course of surface warfare knowledge in Newport, Rhode Island. Officers assigned to different platforms (specifically, Aegis versus non-Aegis billets) receive different lengths of review.

#### *e. Department Head Tours*

Officers serve two Department Head tours, eighteen months each. Certain jobs are reserved for second tour department heads or require a “fleet up” after another tour. During the department head tour, officers are responsible for standing tactical watches underway, while overseeing personnel, schedules, and training while in port. Typically there are four to seven Department Heads on a ship who act as advisors and carry out the commander’s guidance.

## **2. Qualification and Selection**

Qualification in watchstanding positions is standardized using Personnel Qualification Standard, though ships often add on-the-job-training or under instruction time to reinforce skills and gain the commanding officer's confidence before being fully qualified.

### ***a. Surface Warfare Officer***

In order to qualify SWO, officers must complete the prerequisite qualifications, including Combat Information Center Watch Officer, SWO Engineering, Anti-Terrorism Watch Officer, and Underway Officer of the Deck (OOD) (Commander, Naval Surface Forces, 2011, pp. 4-6). Limited Duty Officers and Chief Warrant Officers can have a slightly modified training sequence. Following qualification as SWO, an 1160 officer's designation is changed to 1110.

The timeline for 1160 officers to qualify is normally 22 months of shipboard service. Commanding officers have some discretion for extending the timeframe if there were limitations in the ship's underway schedule or unusual circumstance (Commander, Naval Surface Forces, 2011, pp. 9-10). Once a Commanding Officer has endorsed the SWO qualification, an 1110 officer is authorized to wear the SWO insignia on the appropriate uniform.

If a commanding officer finds that an unqualified junior officer "lacks motivation, interest, aptitude or application to qualify," they can submit a report regarding the unsatisfactory progress. The report must be submitted no later than 22 months after the unqualified officer reports aboard, and affords the opportunity for either increased motivation for qualification or adjudication of non-attainment as a SWO (Commander, Naval Surface Forces, 2011, p. 10).

### ***b. Command Qualification Exam***

Between the first and second department head tour, officers take a five-part command qualification exam, which evaluates tactical and technical expertise.

Additionally, in order to qualify for exam, officers must hold an EOOW and TAO qualification, and receive a recommendation from their commanding officer.

## **B. SURFACE WARFARE OFFICER INCENTIVES**

Monetary incentives are offered to SWOs meeting certain standards. The idea is that quality officers will be identified early and be obliged to remain on active duty because of the bonus and any service obligation they might incur.

### **a. SWOCP/RJCSRB/DHRB**

Starting in October 1999, SWO continuation pay started as an incentive for SWOs to remain in the community through two department head tours (Chief of Naval Operations, 2015, p. 1). The \$50,000 bonus was paid in over a period of seven years.

NAVADMIN 012/06 further clarified Surface Warfare Officer Continuation Pay (SWOCP) bonus eligibility was based on several points (Chief of Naval Operations, 2006):

- Officer must be qualified and serving as a SWO (designation 111X)
- Is selected for assignment as a department head
- Has completed any original commissioning service commitment
- Is able to complete two afloat department head tours (or a designated single longer tour)
- Has applied for SWO continuation pay prior to graduation from department head school

In October 2011, the original continuation pay and junior critical skills retention bonus was replaced by the revised junior critical skills retention bonus, which increased the amount the bonus paid but maintained the service requirement. The new incentive combined into a maximum of \$75,000 bonus paid over six years (Chief of Naval Operations, 2012). The requirements for RJCSRB were similar to SWOCP except that:

- The officer must be permanently appointed to the rank of Lieutenant
- Be administratively screened for department head (received a department head recommendation on a FITREP)

- Have already completed division officer tours
- Not completed/will not complete 25 years of active duty before the end of the contract
- Be sea duty assignable

In 2016, RJCSRB was adapted to allow for more stringent department head selection rates, and those who were selected on first or second look were eligible for increased bonuses, up to \$105,000 (Navy Personnel Command, n.d.). In September 2016, this new format was codified in NAVADMIN 206/16 when the bonus was relabeled Department Head Retention Bonus (DHRB). The number of officers targeted to receive the higher bonuses were limited to 290 in each year group. Those who screened for department head on their first look are eligible for \$105k bonus, those who screen on their second are eligible for \$95k, and those who screen on their third are eligible for \$75k maximum bonus (Chief of Naval Operations, 2016).

***b. Alternate Career Charts***

Starting in 2013, SWOs could select to choose the Accelerated Warfighter path, also known as the Weapons Tactics Instructors (WTI) Career Track, which would focus on Anti-Submarine Warfare and Integrated Air and Missile Defense capabilities on the Aegis platform aboard cruisers and destroyers (Navy Personnel Command, 2013, p. 11). Since then, two additional career charts have been formed, with a focus on Enhanced Readiness (focus on teaching and graduate education) and Accelerated Skillset (specialized training following the first division officer tour, with a delayed second division officer tour) (Navy Personnel Command, n.d., pp. 10-11).

***c. Graduate Education***

One of the Career Charts specifically targets graduate education for SWOs. As found on Navy Personnel Command website that identifies graduate study programs available to officers on active duty, there are multiple programs for which officers can apply (Navy Personnel Command, 2016):

- A tour at the Naval Postgraduate School (NPS), where officers' sole duties are those of a graduate student
- United States Naval Academy (USNA) LEAD Program, where officers serve as company officers at the Naval Academy while teaching a leadership class and earning a degree in Leadership
- USNA GE+T, where students earn a graduate degree followed by a two year assignment at the Naval Academy
- Graduate Education Voucher, where a maximum of \$20,000 per year for two years can be used for graduate school tuition and fees
- Olmstead Scholarship, where officers study at an overseas university
- Pol-Mil Master's Program, where officers can study in select programs from prestigious domestic schools

Funded participation in any of these programs requires an additional obligation of service, in order for the community to recoup the talents gained through graduate education (Chief of Naval Operations, 2007).

*d. Career Intermission Program (CIP)*

This program, first announced in 2009, provides a one-time temporary shift from active duty to the individual ready reserves for one to three years. Participants can apply for either personal or professional reasons and maintain many benefits, including TRICARE coverage, a reduced stipend, and a government-funded move. Participating in the career intermission program (CIP) requires an additional obligated service period (Chief of Naval Operations, 2009). This program is available to all Navy personnel, not just surface warfare officers.

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### **III. INTRODUCTION TO AUCTIONS AND COMBINATORIAL RETENTION AUCTION MECHANISM (CRAM)**

#### **A. AUCTION BACKGROUND**

This chapter will provide an overview of auction types and methods of use to understand how it could be applicable and beneficial to a retention compensation system. To learn additional information, see Krishna (2010), Klemperer (2004), and Easley and Kleinberg (2010).

The purpose behind an auction system is to determine an amount that is meaningful to participants by soliciting information from there (Goeree & Offerman, 2003). As Goeree and Offerman explain, auctions can be based on either how much participants are willing to pay or how little they are willing to receive, and can then be divided further into private value auctions or common value auctions. The former has bidders who know their own valuation of the object but do not know how others value it, and the latter regards an object of known sale price but different parties have their own personal value for it.

#### **B. AUCTION TERMINOLOGY**

##### **1. Independent Private Values**

###### **a. Single-Unit, Private Value**

This version of bidding is a model based on the fact that each bidder is certain about their personal valuation of an item, different bidders independently develop their bids, and bidders know the distribution of values and the number of bidders (Kagel & Levin, p. 1). With this model, evidence shows an increase in the value of bids when the number of bidders increase.

###### **b. Single-Unit, Common Value**

In comparison, this model pertains to an item with a common value to all bidders (Kagel & Levin, p. 4). In this version, all parties share the signals for the value when competing for the item, but might have additional elements that contribute to their

personal valuation. In other words, the item is worth the same to all bidders, but participants have differing information about its true value (Goeree & Offerman, 2003, p. 598).

## **2. English versus Dutch Auction**

Auctions can proceed from either end of the price spectrum: either a low starting reserve price is introduced with increasing bids until participants are not willing to go higher and the highest bidder wins (known as English auction), or a high starting price is lowered until a participant chooses to accept a bid (known as Dutch auctions) (Kagel & Levin, p. 1).

The English auction, also known as ascending-bid, is commonly used for selling goods since it leaves a single high bidder and allows all participants to know the level of the current high bid (McAfee & McMillan, 1987, p. 702). The Dutch auction, also known as descending-bid, allows the auctioneer to psychologically anchor an item's value at a high price before lowering it until one bidder accepts, earning its name from the way cut flowers are sold in the Netherlands.

## **3. Sealed-Bid**

Sealed-bid auctions are similar to English auctions, with the difference that bids are sealed and therefore not all participants are aware of the current bid level. Sealed-bid auctions can come in two forms: first-price or second-price (McAfee & McMillan, 1987, p. 702). First-price is very similar to English auctions because the highest bidder pays the high-bid they submitted; the difference comes from the lack of interaction between bidders because of the sealing process. Second-price auctions differ by allowing the high bidder to still win, but pay the second-highest bid price.

## **4. Combinatorial Retention Auction Mechanism Background**

The distinguishing factor for Combinatorial Retention Auction Mechanism is the fact that it combines monetary and non-monetary incentives (NMI) into a single bid, then retains only the lowest cost bids. For example, individuals in a group are each asked their minimum bonus amount and a set of NMIs they desire; CRAM is then used in

conjunction with the desired number of people to retain to calculate the cost of the first-excluded employee, and all selected individuals are compensated to that level, in a variation of a second-price auction, eliminating the desire to under- or over-bid during the process (Coughlan, Gates, & Myung, 2014). To learn more about CRAM methods, see the workings of Coughlan et al. (2014).

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## **IV. SURFACE WARFARE OFFICER RETENTION SURVEY AND HISTORICAL QUALITY INFORMATION**

### **A. BACKGROUND**

A survey was conducted of surface warfare officers from Naval Postgraduate School and Surface Warfare Officer School (SWOS) to determine what factors contributed most to retention incentives, and how much individuals valued available non-monetary incentives. The survey data included demographic and professional information to conceivably sort participants into “high-quality” and “other” groups in order to determine whether certain incentives were more attractive to “high-quality” SWOs.

### **B. SURVEY DISTRIBUTION**

The survey was developed and distributed via LimeSurvey, an NPS approved survey tool. Questions in the survey were highly based on Kelso’s 2014 work with naval aviators and tried to determine participants’ 1) personal bid for remaining a SWO through two department head tours, 2) personal value of NMIs currently available, and 3) quality via career achievements and qualifications (Kelso, 2014).

After submission to and approval by the NPS Institutional Review Board (IRB), we sent an email to NPS resident SWOs, identified by the SWO chair on campus. The survey was open from September 26, 2016, until October 10, 2016. A reminder was sent to those students who had not completed the survey on October 3, 2016. Because individual student emails were provided by the SWO chair, participants received an individualized web token to ensure that each student only completed the survey once.

To reach SWOS students, a recruitment email was distributed to the instructors at SWOS, who then gave the website link to their students. Because of the overlapping timing of multiple classes at the SWOS command, the SWOS survey was open from September 16, 2016, through October 10, 2016. A reminder recruitment letter was sent to instructors on September 29, 2016. Instructors were aware the survey was voluntary and did not exert undue influence for student participation, but provided the website link and contact information to ensure students could contact researchers with any questions.

## C. SAMPLE STATISTICS

The potential sample population included 101 officers at NPS and approximately 300 students at SWOS, distributed amongst multiple locations. 105 officers initiated survey responses, though five did not complete the consent section and 13 more failed to complete a significant portion of the survey after consenting, yielding 87 responses with enough information from which to derive some analysis.

Table 1 summarizes the sample population demographics, including the breakdown of officers' ship platform for first division officer tour.

Table 1. Survey Demographics

	Number of Records	Percent of population
CG	18	20.7%
DDG	31	35.6%
FFG	7	8.0%
MCM	14	16.1%
LHD	4	4.6%
LHA	1	1.1%
LSD	11	12.6%
LCC	1	1.1%
NPS	37	42.5%
SWOS	50	57.5%
O-1 + (O-1E)	45 (2)	54.0%
O-2	6	6.9%
O-3 + (O-3E)	31 (3)	39.1%
Male	64	73.6%
Female	22	25.3%
No Gender	1	1.1%

## **D. BIDDING PROCESS**

### **1. Uniform-Price Auction Bids**

The first requirement for determining auction potential for retaining quality officers is determining bids for individual reservation values. Adapting the auction system explanation that Eric Kelso used in his thesis work with naval aviators, we asked the question,

The following scenario is a hypothetic situation. Suppose the Navy replaces the current DHRB program with one that uses an auction-based system to determine the bonus amount for a specified number of contracts. This auction-based format would work in the follow manner: Suppose there are 100 SWOs eligible to receive retention bonuses and the Navy announces it will seek to retain 60 of those SWOs. Each SWO would individually and privately submit a bid with the minimum bonus amount he or she would be willing to accept in exchange for agreeing to complete two “Department Head Tours.” The Navy would compile all the bids and award the bonuses to the 60 SWOs with the lowest bids, but it would pay each of them the amount listed in the 61st lowest bid (e.g., if the 61st lowest bid was \$75,000 then the 60 winning SWOs would each receive \$75,000 even though each had offered to accept a lower amount). The remaining SWOs would not receive bonuses and would not be obligated to serve a “Department Head Tour.” This auction format is designed to be in a bidder’s best interest to bid truthfully. That is, there is no incentive to “game” the system by overbidding or underbidding. Assume you are in a group of 200 SWOs eligible to receive a retention bonus. If, under the system described above, the Navy’s goal is to retain 70 SWOs, what is the amount you would likely submit for your bid (total bonus amount, replacing the current DHRB system)? (Kelso, 2014)

Respondents were then able to choose from radio buttons that ranged from \$0 to \$175,000 in \$5,000 increments, plus the choices “Do not wish to be retained” and “Greater than \$175,000.” Immediately following was this question to determine respondents’ understanding of the auction: “How well do you feel you understand the auction-based system described above (e.g., who is retained, how bonus amount is determined, how you should bid).” Tables 2 and 3 summarize the responses to these two questions.

Table 2. Respondent Reservation Price by Paygrade

Paygrade	Number of Records	No Response	Do not retain	More than \$175,000	Viable bids	Mean Bid	Median Bid	Mode	Std Dev
O-1	47	6	6	3	32	\$115,313	\$110,000	\$150,000	\$39,761
O-2	6	-	1	-	5	\$77,000	\$80,000	\$100,000	\$28,636
O-3	34	1	4	1	28	\$83,750	\$95,000	\$100,000	\$41,803

Table 3. Respondent Understanding of Bid Process by Paygrade

	No Response	Do not understand	Somewhat understand	Sufficiently understand	Clearly understand
O-1	5	2	8	17	15
O-2	-	-	-	3	3
O-3	-	2	8	9	15

## 2. Quality Adjusted Discount (QUAD) Scores

As previously explained, the surface community currently using quantitative and qualitative factors to determine officer rankings and thus, quality. Qualitative properties are converted into additional “points” to be added to a qualitative score. This survey did not ask for FITREP (i.e., quantitative) information due to the lack of service time for some junior officers, but focused instead on the qualitative factors. Quantitative information for consideration was obtained separately using historical data provided by PERS-41 and retention data. We used the following qualitative categories on survey respondents:

- SWO pin
- Department head recommendation by end of first tour
- Advanced qualifications earned by the end of second division officer tour
- Chosen for any additional selective billets or qualifications

Because this survey focused on junior officers, some respondents had not yet been on sea duty long enough to earn any of the above qualifications. Forty-one respondents indicated they had earned a SWO pin, and that group became the sample for quality.

Table 4 illustrates the three categories for which individuals could be assigned quality point values. Of note, for both “Qualifications Earned on Sea Duty” and “Selective Billets,” multiple categories might be met, but only the highest earned point value was applied to the individual’s score. Each individual received a score from each of the three categories that was then summed, resulting in a possible low score of zero and a possible high score of eight.

Table 4. Quality Point Values

First Division Officer Performance	Points
Department Head (DH) Recommendation	1
None	0

Qualification Earned by Second Division Officer Tour	Points
TAO (Aegis)	4
TAO (Other)	3
EOOW	2
Air/Surface	1
None	0

Selective Billets	Points
WTI	3
Flag Aide	2
IA/GSA	1
None	0

### 3. CRAM Bids

As previously discussed, CRAM deals with how an individual values an NMI. For this survey, we asked participants about how they value preferred duty station for department head tour and the alternate career charts, of which three are available.

*a. DH Guaranteed Duty Station*

Survey participants were asked two questions in relation to duty station: preferred location for DH tour and how much money from a cash bonus they would be willing to forgo to be guaranteed that location. The choices for location were 1) Do not wish to serve as SWO DH, 2) Continental United States (CONUS) East Coast, 3) CONUS West Coast, 4) Japan, 5) Rota, 6) Hawaii, and 7) Other. Bonus amounts to forgo were entered as numerical values by the participant with no suggested values provided.

Of the 87 respondents, 13 declined to answer or indicated they did not wish to serve a DH tour and five did not include monetary amounts, leaving 69 responses from which to collect NMI data. Tables 5 and 6 summarize this data by paygrade and location, respectively. Mean, median, and standard deviation value only take into account those bids greater than \$0.

Table 5. NMI Value of DH Tour Location by Paygrade

Rank	Observations	Value NMI >\$0	% Who Value NMI >\$0	Mean Value	Median Value	Std Dev
O-1	34	27	79.4%	\$57,055	\$50,000	\$51,815
O-2	5	4	80.0%	\$16,250	\$15,000	\$11,086
O-3	30	19	63.3%	\$34,368	\$10,000	\$44,084

Table 6. NMI Value of DH Tour Location by Location

Location	Observations	Value NMI >\$0	% Who Value NMI >\$0	Mean Value	Median Value	Std Dev
CONUS East Coast	11	5	45.5%	\$40,000	\$25,000	\$39,843
CONUS West Coast	34	28	82.4%	\$48,304	\$25,000	\$49,289
Hawaii	4	3	75.0%	\$6,667	\$5,000	\$2,887
Japan	8	7	87.5%	\$58,714	\$50,000	\$58,906
Other	2	2	100.0%	\$70,000	\$70,000	\$77,782
Rota	10	5	50.0%	\$27,000	\$10,000	\$40,866

**b. Guaranteed Alternate Career Chart**

Participants were asked to value the guarantee of being assigned each of the alternate career charts. Each of these career charts was described:

- Accelerated Warfighter (Warfare Tactics Instructor)
- Enhanced Readiness (First Shore duty, or specialized training/teaching/NPS/civilian graduate education)
- Accelerated Skillset Building (delay 2nd sea duty to allow advanced skillset development at O-2 time)

Participants were told that hypothetically, “However, if you choose one of these options, you would be asked to give up a portion of your bonus. Consider each option individually. How much of the "SWO Bonus" would you be willing to give up to be guaranteed the \_\_\_\_\_ Career Chart?”

Out of 87 participants who completed the survey, 14 failed to provide information for this section or entered nonsensical answers (i.e., “\$1, \$1, \$1” or “\$12345” in every fill-in-the-blank box), leaving 73 participants from which to derive statistical analysis. Tables 7 and 8 display the monetary amount of their bonus each participant would be willing to forgo in order to participate in each alternate career chart, considered individually. Table 7 shows the results by paygrade and Table 8 shows the results by alternate career chart.

Table 7. NMI Value of Alternate Career Charts by Paygrade

Accelerated Warfighter						
	Observations	Value NMI >\$0	% Who Value NMI >\$0	Mean Value	Median Value	Std Dev
O-1	35	15	42.9%	\$42,400	\$20,000	\$48,373
O-2	6	1	16.7%	\$10,000	\$10,000	-
O-3	31	8	25.8%	\$19,750	\$10,000	\$34,566

Enhanced Readiness						
	Observations	Value NMI >\$0	% Who Value NMI >\$0	Mean Value	Median Value	Std Dev
O-1	35	19	54.3%	\$41,105	\$25,000	\$40,584
O-2	6	2	33.3%	\$22,500	\$22,500	\$3,536
O-3	31	11	35.5%	\$16,409	\$10,000	\$13,742

Accelerated Skillset						
	Observations	Value NMI >\$0	% Who Value NMI >\$0	Mean Value	Median Value	Std Dev
O-1	35	19	54.3%	\$38,526	\$25,000	\$45,124
O-2	6	3	50.0%	\$16,667	\$20,000	\$5,774
O-3	31	5	16.1%	\$10,000	\$10,000	\$6,124

Table 8. NMI Value of Alternate Career Chart by Alternate Career Chart

	Observations	Value NMI >\$0	% Who Value NMI >\$0	Mean Value	Median Value	Std Dev
Accelerated Warfighter	72	24	33.3%	\$33,500	\$10,000	\$43,925
Enhanced Readiness	72	32	44.4%	\$31,453	\$20,000	\$34,063
Accelerated Skillset	72	27	37.5%	\$30,815	\$15,000	\$39,596

## E. HISTORICAL QUALITY INFORMATION

To determine whether the Navy could gain cost savings by implementing a quality-based auction system, we had to analyze historical information regarding which SWOs are retained and who takes bonuses. PERS-41, the office that details SWOs to assignments, provided historical information for certain year groups regarding demographics, FITREP data, and who received a bonus. Because of the limitations with

historical data, the same parameters that were used to determine survey participants' quality were not available (i.e., top qualification earned by the end of second division officer tour, flag aide or WTI participation, or DH recommendation during first division officer tour). Therefore, the quantitative FITREP measure was the most accessible parameter to use.

We received a separate record for each FITREP an individual received, meaning that some individuals received three or four records in a single year (for example, a lieutenant junior grade received a periodic FITREP in February, and change of reporting senior FITREP in July, and a detaching FITREP in December). To distill a single record for each individual for each year, we calculated in Excel the length of time of the FITREP (using the begin and end date), then calculated which of multiple FITREPs in a single year covered the greatest amount of time.

At this point the data was reduced to a single annual record for each individual, but each year was a separate record. We reshaped the information so that social security numbers acted as a record identifier with each annual year of information becoming a separate column, reducing the records to a single row for each individual. This yielded 5,413 records.

One more limitation of our data is the fact that FITREP data is not retained for officers who separate from the military. Therefore, quality data had to be extrapolated for the missing years. The most complete year group information we could extract was from year group 11, for whom we had ensign, lieutenant junior grade, and lieutenant FITREPs. We also assumed that for year group 11, a minimal number of SWOs had reached their service obligation and left the military, therefore leaving a larger representative group of FITREPs to use for data.

Variations in the number of records for each year could result from non-observed FITREPs or a lapse in annual FITREP due to transfer timing. To see whether there was a strong correlation between reporting senior cumulative average and an individual's trait average, we ran a correlation and included the results. Table 9 contains the data for year

group 2011 FITREP statistics in the first five years of service to be used as a comparison standard for quality retention against other year groups.

Table 9. FITREP Statistical Basis for Year Group 2011

Year Group 2011											
		Obs	Average Trait Average	Median Trait Average	Std Dev	Corr	R-Sqr	Int	Int P-value	Coeff	Coeff P-Value
ENS	2012	563	3.808	3.830	0.3808	0.6045	0.3654	0.1819	0.3687	0.9455	2.25E-57
ENS	2013	348	3.962	4.000	0.4089	0.4765	0.2270	0.6153	4.73E-11	1.5986	4E-21
LTJG	2014	445	4.036	4.000	0.3943	0.5896	0.3476	0.2444	0.3238	0.9440	5.23E-43
LTJG	2015	390	4.103	4.140	0.3764	0.5585	0.3120	0.2041	0.4886	0.9664	2.26E-33
LT	2016	453	4.033	4.000	0.4222	0.3335	0.3120	2.9416	1.49E-64	0.2631	3.14E-13

A strong correlation does not occur between reporting senior cumulative average and an individual's trait average, meaning that variation in the individual's trait average is not largely due to how their reporting senior grades junior officers.

Once we had a basis for what representative FITREP scores would be for the group as a whole at each of the first five years of their career, we could compare that value to other year groups and determine whether the missing data from departing officers indicated the loss of high-quality or low-quality officers, as seen in Table 10. These YG11 values became the expected value for statistical significance. Other individual year groups became the observed values, with a null hypothesis that observed values would be equal to expected values, with the significance set to 95% when determining the critical t-value.

Table 10. FITREP Data for Individual Year Groups (YG)  
Compared to Standard

		YG 2006				Standard YG			Statistical Significance		
		Obs	Avg Trait Avg	Med Trait Avg	Std Dev	Avg Trait Avg	Med Trait Avg	Std Dev	T-value	P-value	Stat Sig?
ENS	2007	266	3.9050	4.0000	0.4303	3.8080	3.8300	0.3808	3.2762	0.0011	Yes
ENS	2008	163	4.0930	4.1400	0.4238	3.9620	4.0000	0.4089	3.3285	0.0009	Yes
LTJG	2009	231	4.2190	4.2900	0.3376	4.0360	4.0000	0.3943	5.9931	0.0001	Yes
LTJG	2010	175	4.2740	4.2900	0.3776	4.1030	4.1400	0.3764	4.9999	0.0001	Yes
LT	2011	189	4.2690	4.3300	0.4129	4.0330	4.0000	0.4222	6.5098	0.0001	Yes
		YG 2007				Standard YG			Statistical Significance		
		Obs	Avg Trait Avg	Med Trait Avg	Std Dev	Avg Trait Avg	Med Trait Avg	Std Dev	T-value	P-value	Stat Sig?
ENS	2008	243	3.8980	4.0000	0.4081	3.8080	3.8300	0.3808	3.0175	0.0026	Yes
ENS	2009	155	4.0420	4.1400	0.3607	3.9620	4.0000	0.4089	2.0938	0.0368	Yes
LTJG	2010	208	4.1760	4.1700	0.3194	4.0360	4.0000	0.3943	4.4855	0.0001	Yes
LTJG	2011	177	4.2300	4.2900	0.3428	4.1030	4.1400	0.3764	3.8277	0.0001	Yes
LT	2012	171	4.2810	4.2900	0.3898	4.0330	4.0000	0.4222	6.6839	0.0001	Yes
		YG 2008				Standard YG			Statistical Significance		
		Obs	Avg Trait Avg	Med Trait Avg	Std Dev	Avg Trait Avg	Med Trait Avg	Std Dev	T-value	P-value	Stat Sig?
ENS	2009	312	3.8160	3.8300	0.4307	3.8080	3.8300	0.3808	0.2943	0.7686	No
ENS	2010	194	3.9750	4.0000	0.3467	3.9620	4.0000	0.4089	0.3741	0.7085	No
LTJG	2011	254	4.1180	4.1400	0.3719	4.0360	4.0000	0.3943	2.6988	0.0071	Yes
LTJG	2012	219	4.2060	4.2900	0.3814	4.1030	4.1400	0.3764	3.2105	0.0014	Yes
LT	2013	245	4.1950	4.2900	0.4220	4.0330	4.0000	0.4222	4.8363	0.0001	Yes
		YG 2009				Standard YG			Statistical Significance		
		Obs	Avg Trait Avg	Med Trait Avg	Std Dev	Avg Trait Avg	Med Trait Avg	Std Dev	T-value	P-value	Stat Sig?
ENS	2010	366	3.7910	3.8300	0.3808	3.8080	3.8300	0.3808	0.6805	0.4964	No
ENS	2011	241	4.0160	4.0000	0.4070	3.9620	4.0000	0.4089	1.5794	0.1148	No
LTJG	2012	296	4.0590	4.1400	0.4277	4.0360	4.0000	0.3943	0.7645	0.4448	No
LTJG	2013	267	4.1500	4.1400	0.3698	4.1030	4.1400	0.3764	1.5744	0.1159	No
LT	2014	305	4.1620	4.1700	0.3754	4.0330	4.0000	0.4222	4.3268	0.0001	Yes
		YG 2010				Standard YG			Statistical Significance		
		Obs	Avg Trait Avg	Med Trait Avg	Std Dev	Avg Trait Avg	Med Trait Avg	Std Dev	T-value	P-value	Stat Sig?
ENS	2011	522	3.7670	3.8300	0.3938	3.8080	3.8300	0.3808	1.7329	0.0834	No
ENS	2012	358	3.9910	4.0000	0.4250	3.9620	4.0000	0.4089	0.9112	0.3625	No
LTJG	2013	397	4.0530	4.1400	0.3788	4.0360	4.0000	0.3943	0.6333	0.5267	No
LTJG	2014	378	4.1300	4.1400	0.3701	4.1030	4.1400	0.3764	1.0148	0.3105	No
LT	2015	436	4.1010	4.1400	0.3779	4.0330	4.0000	0.4222	2.5207	0.0119	Yes

Based on these results, there was a mixed result as to whether the officers retained in previous year groups had statistically significant higher FITREP scores when compared to the standard group. That is, neither particularly high quality nor low quality officers were retained and remained on active duty as SWOs compared to the standard year group, though every YG had a statistically significantly higher LT FITREP than the standard group. Therefore, the legacy bonus system retained officers marginally comparable to the standard quality, but did not particularly retain significantly high quality officers; however, perhaps a bonus system that focused on quality points other than FITREP average could increase the quality of officers retained to serve as department heads.

## **F. OTHER BONUS FACTORS**

From other questions in the survey, participants indicated NMI and bonus schedules that would change their opinion of the bonus.

### **1. Other NMI Requested**

Participants indicated a variety of NMI would affect their reservation bid or desire to stay in the Navy, including:

- Guaranteed DH billet
- Guaranteed DH ship platform
- Guaranteed DH location for both tours
- Guarantee of early command
- Career Intermission Program / nonconsecutive DH tours

### **2. Continuation Pay**

The new Blended Retirement System will implement a continuation pay bonus. To determine the effect this has on individuals taking bonuses, we asked the following question:

The Military Compensation and Retirement Modernization Commission (MCRMC) made recommendations for the military retirement system that will be implemented in 2018. One cash payout portion of the report

includes a continuation pay that will be dispersed at Year of Service (YOS) 12. This bonus will equal 2.5 times monthly basic pay, plus a potential additional pay to be provided by service, with an associated obligation to remain on active duty for four more years.

At YOS 12, you expect to be an O-4. In 2016 dollars, you expect a monthly base pay of \$7,081.50, meaning the minimum continuation pay amount would be \$17,703.75.

Assuming your continuation pay offered at the 12 year mark is \$18,000, how likely would you be to accept the bonus in exchange for a 4 year commitment?

Though we did not ask respondents if they had prior knowledge of the system, this question was designed to provide a thorough explanation for individuals to understand their possible actions. Respondent answers were:

- Very Unlikely – 6 (7.7%)
- Unlikely – 8 (10.4%)
- Somewhat Unlikely – 9 (11.7%)
- Neutral / Uncertain – 18 (23.4%)
- Somewhat Likely – 15 (19.5%)
- Likely – 14 (18.2%)
- Very Likely – 7 (9.1%)

While only some of the participants will be eligible for continuation pay (one must opt for the Blended Retirement System), this normal curve of responses indicates another opportunity for the SWO community to incentivize individuals to stay for DH tours.

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## **V. ANALYSIS AND RESULTS**

### **A. INTRODUCTION**

The data was analyzed in two parts: survey results were subjected to a simulated auction scenario, followed by historical data analysis to see if an auction bonus system would provide the government with cost savings.

The auction system will be displayed in four models: first, a simple auction using only SWO retention goals; second, applying a simulated quality point scale for a QUAD auction; third and fourth, simulating CRAM with NMIs of DH tour location and alternate career charts, respectively. The total costs of each of these systems will then be compared to the current system to determine whether the government could save costs by switching systems. To determine the population, we will assume that bids can be made at any point in a SWO's career, though the more junior the officer the less chance they have had to develop quality points, which might affect their position in the quality bonus rating. Therefore, all participants who included a hypothetical bid and enough information in the NMI section will be considered part of the population.

### **B. GENERAL ANALYSIS**

To simulate a standard auction bonus system, we will use the SWO retention goal announced in 2015 at 50-60%; we will use the 60% mark as it is closer to the historical 80% bonus allotment (Navy Personnel Command, n.d., p. 13). In this case, with 67 survey participants meeting the requirements and answering enough survey information for statistical use, the retention goal will be to retain 40 SWOs.

### **C. SIMPLE UNIFORM PRICE AUCTION**

#### **1. Auction Standard**

In the reverse of a normal auction system, where the highest bidder wins, this form of auction allows the lowest bids to win (thus giving the government the greatest cost savings). To determine this, all the bids are sorted in ascending order and the lowest 40 bids are the SWOs who are retained. In case the cut-off point occurs between two bids

of equal value, the person with the higher quality points is the one retained. As explained in the survey during the bid process, over- or underbidding is discouraged by setting the bonus at the first excluded bid price.

## **2. Results**

The simple uniform price auction resulted in a cut-off point of \$110,000, which four participants bid; three were to be accepted and one was to be excluded. However, by applying the quality point differentiator for a new cut-off, one participant had six points and three participants had zero. In this case, the cut-off was raised to include one additional participant and cut-off between \$110,000 and \$115,000. As the first excluded bid, \$115,000 became the bonus amount for all the participants whose bids were accepted.

## **D. QUAD AUCTION MODEL**

### **1. QUAD Standard**

In this model, a discount was applied to the bids of the ten participants who scored in the top 15% of the sample. We set the amount of the discount at \$30,000, based on the recent increase of the bonus from \$75,000 under RJCSRB to \$105,000 under DHRB. The simple auction format was then carried out with the ten bids discounted.

### **2. Results**

The QUAD auction resulted in a cut-off point of \$110,000. Though one of the original \$110,000 bids was discounted to \$80,000, an identical cut-off dilemma to the simple uniform price auction resulted. Again, the first excluded bid of \$115,000 became the bonus amount for all the accepted participants. The overall average quality points for these participants was 1.403, with the individual score range between 0 and 6. All ensigns received quality scores of 0, having met none of the score requirements, while lieutenants junior grade scores ranged from 1 to 4, and lieutenants from 1 to 6.

## **E. CRAM MODEL I**

### **1. CRAM Standard for NMI: Guaranteed Location**

The estimated cost of a permanent change of station (PCS) is \$15,000 (Secretary of the Navy, 2014). To account for this, participants' reservation bids were decreased by \$15,000 and then applied as an adjustment price to their initial bonus bid (if the amount resulted in a negative cost, a zero was entered for their adjusted bid). As before, if the retention cut-off point occurred in a group with the same bid, quality points were examined as a differentiator.

### **2. Results**

The CRAM model for guaranteed duty station resulted in a cut-off point of \$100,000. Five participants bid this amount and only one was to be retained; when examining quality points, two participants tied and were both retained. The first excluded bid was \$105,000, so all 41 retained participants were granted this amount.

## **F. CRAM MODEL II**

### **1. CRAM Standard for NMI: Alternate Career Chart**

While there is presumably an associated cost for each alternate career chart, the variation in locations and newness of the program makes it difficult to estimate. For simplicity and standardization, we assume the Accelerated Warfighter will be the most expensive program because it definitely includes a move and schooling, Enhanced Readiness will be the second most expensive because it might require a move or schooling, and Accelerated Skillset will be the least expensive because it simply rearranges the legacy career milestones. For that reason, Accelerated Warfighter bids will be reduced by \$10,000, Enhanced Readiness bids will be reduced by \$8,000, and Accelerated Skillset bids will not be reduced.

*a. Accelerated Warfighter Standard*

By reducing any NMI bid over \$10,000 for the desired chart by that amount, and then applying the revised amount to the bonus amount, those who valued the career chart higher were now closer to the top for retention.

*b. Accelerated Warfighter Results*

The CRAM model for guaranteed NMI of Accelerated Warfighter resulted in a cut-off point of \$105,000. Three participants bid this amount and though two should have been excluded by retention goals, all three had the same quality points and thus all three were retained, resulting in a retention allowance of 42 individuals. The first excluded bid was \$110,000, so all 42 retained participants were granted this amount.

*c. Enhanced Readiness Standard*

By reducing any NMI bid over \$8,000 for the desired chart by that amount, and then applying the revised amount to the bonus amount, those who valued the career chart higher were now closer to the top for retention.

*d. Enhanced Readiness Results*

The CRAM model for Enhanced Readiness resulted in a cut-off point of \$100,000. Nine participants bid this amount, but only seven were to be retained, which matched with a natural cut-off in quality points; 40 participants were retained. The first excluded bid was \$108,000, so all 40 retained participants were granted this amount.

*e. Accelerated Skillset Standard*

This NMI bid was not reduced, and was simply deducted from the individual's reservation bid.

*f. Accelerated Skillset Results*

The CRAM model for Accelerated Skillset had a cut-off point of \$100,000. Thirteen participants had adjusted bids of that amount and ten were to be retained; we evaluated quality points and while nine had quality points that clearly included them in

the bonus group, there was no distinction for the other four. Therefore, all 13 participants at this bid level were retained with a \$100,000 bid, leaving the number retained at 43 participants. The first excluded bid was \$109,000, so all 43 SWOs retained would receive this amount.

## **2. Overall CRAM Results**

Several observations about this CRAM method help determine whether it would be a usable format for a bonus auction. First, even if the retention rate was reduced to 50%, the cut-off point occurred within the same block of bidders and did not change the first excluded bid amount; the only change for payouts might be the number of quality participants and therefore the number of payouts made, but not the amount of each payout.

Second, the overall bids from ensigns was higher to start than the bids from lieutenants. This could possibly be a factor of the shift from RJCSRB of \$75,000 that most lieutenants were offered to DHRB of \$105,000 that most ensigns expect to be offered; being mentally anchored at a higher amount count contribute to the marked difference between how ranks bid, and skew the results to a higher amount.

Third, though participants overall indicated they understood the auction system, some participants bid a low amount and then indicated they were willing to forgo a higher amount to receive an NMI. These bids were entered as zeroes, but in an actual bidding situation they would have to bid a higher amount or lower their NMI amount.

Fourth, the highest quality participants were naturally more senior and have had more time to gain qualifications. However, because of the aforementioned anchoring, these participants already had relatively low bids, so they were already in the retention group. The quality portion of this auction would have been more significant if either more people received the bid discount due to quality or if the retention target was lower. Because of this, we examined the QUAD data for just lieutenants to see if there is a significance in quality score and bid distribution.

## **G. QUAD AUCTION MODEL—LIEUTENANTS ONLY**

### **1. QUAD Standard**

Thirty lieutenants included enough data to be included in this specific QUAD analysis. Quality discounts in the amount of \$30,000 should be applied to the top 15% (5 individuals), but the quality point cut-off was better suited to allowing six individuals to receive discounts, resulting in the top 20% receiving discounts. The discount remained at \$30,000. The simple auction format was then carried out with the six bids discounted and retention goals remaining at 60%.

### **2. Results**

This QUAD auction resulted in a cut-off point of \$100,000. Seven participants bid this amount and three of those individuals were desired for retention, but quality points increased retention to six of these bidders, with one bidder being excluded and 21 individuals receiving the first excluded bid of \$125,000. The average quality score for lieutenant-only QUAD was 2.833, with individuals receiving a range from 1 to 6 quality points.

## **H. COST SAVINGS**

According to PERS-311 records, 57 SWOs took SWOCP money and 1,485 took RJCSRB for year groups 2006 to 2011. Because these bonuses were limited to \$75,000, the total payment for these bonuses was \$115,650,000. Using year group 2011 as a basis for calculation, 148 SWOs took the bonus for a total cost of \$11,100,000. Because year group 2011 was targeted for 80% retention, we can calculate that the entire year group was comprised of 185 SWOs. Table 11 summarizes the actual amounts paid to year group 2011 under the RJCSRB system with 80% retention, the projected amounts that would be paid if year group 2011 were under the DHRB system with 60% retention, and the total payouts for each of the models being applied to the year group.

Table 11. Cost Savings of Various Bonus Systems Pegged to RJCSRB

Year Group 2011					
	Retention Target	Individual Bonus	Total Bonus Payout	Cost Savings (\$)	Cost Savings (%)
RJCSRB	80%	\$75,000	\$11,100,000	-	-
DHRB	50%	\$105,000	\$9,712,500	\$1,387,500	12.5%
	60%	\$105,000	\$11,655,000	\$(555,000)	-5.0%
Simple Auction	50%	\$105,000	\$9,712,500	\$1,387,500	12.5%
	60%	\$115,000	\$12,765,000	\$(1,665,000)	-15.0%
QUAD	50%	\$105,000	\$9,712,500	\$1,387,500	12.5%
	60%	\$115,000	\$12,765,000	\$(1,665,000)	-15.0%
CRAM: Duty Location	50%	\$100,000	\$9,250,000	\$1,850,000	16.7%
	60%	\$105,000	\$11,655,000	\$(555,000)	-5.0%
CRAM: Accelerated Warfighter	50%	\$105,000	\$9,712,500	\$1,387,500	12.5%
	60%	\$110,000	\$12,210,000	\$(1,110,000)	-10.0%
CRAM: Enhanced Readiness	50%	\$108,000	\$9,990,000	\$1,110,000	10.0%
	60%	\$108,000	\$11,988,000	\$(888,000)	-8.0%
CRAM: Accelerated Skillset	50%	\$109,000	\$10,082,500	\$1,017,500	9.2%
	60%	\$109,000	\$12,099,000	\$(999,000)	-9.0%

Though the individual bonus for each model is sometimes the same between the 50% and 60% retention target, the lower number of payouts required for the 50% payout can result in a cost savings for some models. At a 60% retention target, none of the models provide a cost savings. However, these values are pegged to RJCSRB and historical numbers. Table 12 pegs the values to DHRB at 55% retention.

Table 12. Cost Savings of Various Bonus Systems Pegged to DHRB

Year Group 2011					
	Retention Target	Individual Bonus	Total Bonus Payout	Cost Savings (\$)	Cost Savings (%)
DHRB	55%	\$105,000	\$10,683,750	-	-
Simple Auction	50%	\$105,000	\$9,712,500	\$971,250	9.1%
	60%	\$115,000	\$12,765,000	\$(2,081,250)	-19.5%
QUAD	50%	\$105,000	\$9,712,500	\$971,250	9.1%
	60%	\$115,000	\$12,765,000	\$(2,081,250)	-19.5%
CRAM: Duty Location	50%	\$100,000	\$9,250,000	\$1,433,750	13.4%
	60%	\$105,000	\$11,655,000	\$(971,250)	-9.1%
CRAM: Accelerated Warfighter	50%	\$105,000	\$9,712,500	\$971,250	9.1%
	60%	\$110,000	\$12,210,000	\$(1,526,250)	-14.3%
CRAM: Enhanced Readiness	50%	\$108,000	\$9,990,000	\$693,750	6.5%
	60%	\$108,000	\$11,988,000	\$(1,304,250)	-12.2%
CRAM: Accelerated Skillset	50%	\$109,000	\$10,082,500	\$601,250	5.6%
	60%	\$109,000	\$12,099,000	\$(1,415,250)	-13.2%

Even pegged to DHRB with a retention target of 55% (the average retention goal), none of the models show a cost savings potential at 60% retention, but all show a savings at 50% retention.

Based on the historical data used and the survey results, none of the models will result in a cost savings to the Navy when considering auction systems to determine bonus amounts. However, because this data was collected from a variety of paygrades, with a large range of quality scores, and from participants who possibly had varied anchored bonus amounts based on previous bonus programs, a live auction system could produce different results.

## **VI. SUMMARY, CONCLUSION, AND RECOMMENDATIONS**

### **A. SUMMARY**

We planned to model the potential cost savings that might result from modifying the former RJCSRB bonus and current DHRB bonus into an auction-based system for surface warfare officers obligating to two department head tours, with the additional consideration of quality points and NMIs. These potential replacement bonus systems were applied to a simple auction system, a QUAD system, and two CRAM systems. Surveying SWO students at SWOS and NPS, we received 67 usable bids that could be used to identify quality officers. Reservation prices were then determined for each of the models (applying discounts as appropriate) and simulated using published retention goals. The costs of these simulated models were then compared to historical costs of surface warfare officer bonus programs.

### **B. CONCLUSIONS**

The results of these simulations showed limited potential for cost savings by using auction systems for future bonus systems. The only time cost savings were realized was with minimal retention goals.

Our auction format had limitations that might misrepresent the potential usefulness of these system. Targeting three ranks with a wide level of experience led to differences in bids that were tied to rank. The experiences that more senior officers had anchored expectations in a different way than those of more junior officers. Also, the quality portion of the bonuses had a lower effect than expected because it did not drastically change the range of people or amount of bonus received. If more people were awarded quality concessions or retention targets were lower, the application of quality points would have had a larger effect.

Because community retention goals were released as a flexible range, we were able to calculate cost savings for both extremes of the range. If retention was decreased to the minimum of 50%, overall cost savings using any of these systems would be an average of \$1,063,750 compared to estimated DHRB payouts. However, if the

community uses the retention goal of 60%, overall costs compared to DHRB would increase by an average \$1,470,750. However, the DHRB system is set up to have follow-on reduced retention goals in subsequent years for those who do not meet initial requirements. Therefore, any small potential cost savings could be negated by the follow-on bonuses distributed in smaller amounts to a small number of people.

### C. RECOMMENDATIONS

This data could be refined if a follow-on study used a larger number of participants of junior officers. Because a number of the more senior participants had already obligated to a legacy bonus system (and therefore anchored expectations to the legacy amount), a survey that used just a large group of junior officers who had not taken the bonus might be more representative of cost-savings potential.

Additionally, because we attempted to use historical data that was not specifically correlated to survey demographics (i.e., we did not attempt to match FITREP data to our survey participants) we had to make assumptions for the quality retention portion. If a future survey collected specific, reliable FITREP data from participants, those researchers could better determine the quality of officers who have already accepted bonus contracts.

Lastly, though this thesis focused on monetary bonuses (or value of non-monetary incentives), many survey participants felt strongly that money should not be used as the sole incentive offered by the military. They raised concerns that applying a quality point system would create competitive incentives amongst peers, and quality on paper might not be the same thing as quality performance. Future researchers should continue to adapt measurement systems in an attempt to better measure an officer's potential in a meaningful way.

## **APPENDIX. COPY OF SURVEY**

### **Survey of SWO Retention (SWOS)**

This research survey will help aggregate data for use in a master's thesis.

There are 55 questions in this survey

#### **1. Preview**

The opinions you express in the following survey will give researchers an idea of what incentives motivate Surface Warfare Officers to stay in the Navy.

The first question will serve as your consent (since signatures cannot be collected with this online survey), and will follow by questions regarding your opinions and demographics.

This survey is expected to take approximately 20 minutes to complete.

Thank you in advance for your response!

Please choose **all** that apply:

- I understand!

#### **2. Informed Consent**

##### **Naval Postgraduate School Consent to Participate in Research**

If you wish to retain a copy of this statement for your personal records, please print this screen.

**Introduction.** You are invited to participate in a research study entitled Survey of SWO Retention (2016). The purpose of the research is solicit opinions on the timing of multiple bonuses during the standard Navy career and how bonus timing effects retention.

**Procedures.** This survey will ask you to make a series of economic and financial decisions. The decisions will be made through your computer station. This survey will take about 15-25 minutes. About 250 subjects are expected to participate in this experiment. The procedures are only related to the research and serve no purpose other than this research endeavor. The details of the experiment will be provided in the instruction section.

**Location.** The survey will take place online, following the completion of this consent form.

**Voluntary Nature of the Study.** Your participation in this study is strictly voluntary. If you choose to participate you can change your mind at any time and withdraw from the study. You will not be penalized in any way or lose any benefits to which you would otherwise be entitled if you choose not to participate in this study or to withdraw. Alternative to participating in the study is to not participate.

**Potential Risks and Discomforts.** The potential risks of participating in this study are minimal. As with any experiment, there is a possibility of breach of confidentiality. Please see confidentiality and privacy statement below. This project does not involve greater than minimal risk and involve no known reasonably foreseeable risks or hazards greater than those encountered in everyday life.

**Anticipated Benefits.** Results from this survey could advance economic science and develop more efficient and effective means of bonus timing and amounts to meet required retention levels. You will not directly benefit from your participation in this research.

**Confidentiality & Privacy Act.** Any information that is obtained during this study will be kept confidential to the full extent permitted by law. All efforts, within reason, will be made to keep your personal information in your research record confidential but total confidentiality cannot be guaranteed. Your name will not be linked to any publications and a generic participant number will be used for analyzing and reporting experimental results. Data will be stored on NPS computer and any hard copies will be stored in NPS offices.

**Points of Contact.** If you have any questions or comments about the research, or you experience an injury or have questions about any discomforts that you experience while taking part in this study please contact the Principal Investigator, Dr. Noah Myung, 831-656-2811, [noah.myung@nps.edu](mailto:noah.myung@nps.edu). Questions about your rights as a research subject or any other concerns may be addressed to the Navy Postgraduate School IRB Chair, Dr. Larry Shattuck, 831-656-2473, [lgshattu@nps.edu](mailto:lgshattu@nps.edu).

**Statement of Consent.** I have read the information provided above. I have been given the opportunity to ask questions and all the questions have been answered to my satisfaction. I have been provided a copy of this form for my records and I agree to participate in this study. I understand that by agreeing to participate in this research and signing this form, I do not waive any of my legal rights. I indicate my consent by selecting "YES" below.

\*

Please choose **only one** of the following:

- Yes
- No

### 3. Career Satisfaction

Please answer the following questions based on your PERSONAL experience / opinion:

**Use the following scale to answer how the factors below affect/affected your decision to STAY on Active Duty and serve a Department Head Tour**

**If "Other," please specify in the next question.**

Please choose the appropriate response for each item:

	Significant ly Negative (makes me want to leave the military)	Negativ e	Somewh at Negative	Neutral/Do es not Affect	Somewh at Positive	Positiv e	Significant ly Positive (makes me want to stay in the military)
Past Career Experience in the Navy	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Current Job Satisfaction	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Future Career Opportunitie s / Requirement s	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Duty Station Location	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Cumulative Work Time Away From Home	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Geographic Stability	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Employment Opportunitie s Outside the Navy	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Career Opportunitie s for Spouse / Significant Other	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Patriotism	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Camaraderie	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Too Much Time Spent at Sea	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Too Little Time Spent	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

	Significant ly Negative (makes me want to leave the military)	Negativ e	Somewh at Negative	Neutral/Do es not Affect	Somewh at Positive	Positiv e	Significant ly Positive (makes me want to stay in the military)
<b>at Sea</b>							
Education Offered by the Navy	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Training Offered by the Navy	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Quality of Life	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
OPTEMPO	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Monthly Pay & Compensation	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Legacy "High 3" Retirement Plan	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Future "Blended Retirement" Plan	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Job Security	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Healthcare	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Graduation Education Potential	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Career Intermission Program	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
WTI Program	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Multiple Surface Warfare Career Chart Options	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Bonuses	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Other	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

If you chose "Other" above, please specify here, and whether it makes you want to stay or leave the military:

Please write your answer here:

What is the most influential reason for you to STAY in the military TODAY (pick the one best answer)?

Please choose **only one** of the following:

- Patriotism

- Education opportunities
- Pay
- Pension/Retirement plan
- Job security
- Healthcare
- Job Satisfaction
- Other

What is the most influential reason you would LEAVE the military TODAY (pick the one best answer)?

Please choose **only one** of the following:

- Patriotism
- Education opportunities
- Pay
- Pension/Retirement plan
- Job security
- Healthcare
- Job Satisfaction
- Other

Suppose you had the option of receiving \$10,000 today (no strings attached). Further suppose that you had the option of instead receiving a larger dollar amount in the future.

What is the minimum dollar amount you would need to receive 1 month from now for you to be willing to choose that over receiving the \$10,000 today?

Please choose **only one** of the following:

- \$10,001-\$10,100
- \$10,101-\$10,200

- \$10,201-\$10,300
- \$10,301-\$10,400
- \$10,401-\$10,500
- \$10,501-\$10,600
- \$10,601-\$10,700
- \$10,701-\$10,800
- \$10,801-\$10,900
- \$10,901-\$11,000
- \$11,001-\$12,000
- \$12,001-\$13,000
- \$13,001-\$14,000
- \$14,001-\$15,000
- Greater than \$15,000

What is the minimum dollar you would need to receive 1 year from now for you to be willing to choose that over receiving \$10,000 today?

Please choose **only one** of the following:

- \$10,001-\$11,000
- \$11,001-\$12,000
- \$12,001-\$13,000
- \$13,001-\$14,000
- \$14,001-\$15,000
- \$15,001-\$16,000
- \$16,001-\$17,000
- \$17,001-\$18,000
- \$18,001-\$19,000
- \$19,001-\$20,000
- Greater than \$20,000

What is the minimum dollar you would need to receive 10 years from now for you to be willing to choose that over receiving \$10,000 today?

Please choose **only one** of the following:

- \$10,001-\$15,000
- \$15,001-\$20,000
- \$20,001-\$25,000
- \$25,001-\$30,000
- \$30,001-\$35,000
- \$35,001-\$40,000
- \$40,001-\$45,000
- \$45,001-\$50,000
- Greater than \$50,000

Would you be willing to take a pay cut to leave the military?

Please choose **only one** of the following:

- Yes
- No

Are you willing to work more hours as a civilian than you do now?

Please choose **only one** of the following:

- Yes - Specify how many hours per week you are willing to work
- No

Make a comment on your choice here:

Please provide any additional comments in regard to questions in this section:

Please write your answer here:

#### 4. Incentives for Retention

Initial SWO Bonus

**The first bonus in a SWO's career is also referred to as the "SWOCP" (the initial bonus system), Revised Junior Critical Skills Retention Bonus**

**(RJCSRB, the revised system), or simply the Department Head Retention Bonus (DHRB, the newest system). DHRB is offered as an incentive to all eligible SWOs, who (in exchange for a cash bonus) agree to remain on active duty beyond their Minimum Service Requirement and complete two Department Head Tours. Bonus amounts have changed over time and are divided into multiple annual payments.**

**Have you accepted or submitted a DHRB contract?**

Please choose **only one** of the following:

- Yes
- No

What was the total amount for your DHRB contract?

Please choose **only one** of the following:

- \$75,000
- \$105,000
- Other (please specify)
- I have not yet accepted the DHRB

Make a comment on your choice here:

How much of an effect does / did DHRB have on your decision to stay in the Navy?

Please choose **only one** of the following:

- No affect at all
- Very little affect
- Somewhat affected
- Affected very much

Assume the initial SWO bonus offered to you was \$75,000; how likely would you be to accept the bonus?

Please choose **only one** of the following:

- Very Unlikely (<15% chance of accepting the bonus)

- Unlikely (16%-30% chance of accepting the bonus)
- Somewhat Unlikely (31%-45% chance of accepting the bonus)
- Neutral/ Uncertain (46%-55% chance of accepting the bonus)
- Somewhat Likely (56%-70% chance of accepting the bonus)
- Likely (71%-85% chance of accepting the bonus)
- Very Likely (>86% chance of accepting the bonus)

How likely would you be to accept the bonus and agree to complete two Department Head Tours if the bonus offered to you was \_\_\_\_\_ (values below)?

Please choose the appropriate response for each item:

	Very Unlikely (<15% chance of accepting the bonus)	Unlikely (16%- 30% chance of accepting the bonus)	Somewhat Unlikely (31%-45% chance of accepting the bonus)	Neutral/ Uncertain (46%- 55% chance of accepting the bonus)	Somewhat Likely (56%-70% chance of accepting the bonus)	Likely (71%- 85% chance of accepting the bonus)	Very Likely (>86% chance of accepting the bonus)
\$0	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
\$25,000	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
\$50,000	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
\$75,000	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
\$100,000	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
\$125,000	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
\$150,000	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
\$175,000	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Please state how much you AGREE with the following statements about the SWO Department Head Bonus program:

Please choose the appropriate response for each item:

	Strongly Disagree	Disagree	Somewhat Disagree	Neutral	Somewhat Agree	Agree	Strongly Agree
Bonus amounts (dollars paid) should be tailored to meet the specific retention goals of individual communities	<input type="radio"/>						
The number of bonus contracts offered should not exceed retention	<input type="radio"/>						

	Strongly Disagree	Disagree	Somewhat Disagree	Neutral	Somewhat Agree	Agree	Strongly Agree
goals							
Prior to awarding the bonus, performance records of applicants should be screened to determine suitability for eventual command potential	<input type="radio"/>						
SWOs with records of superior performance should be offered larger bonuses than other SWOs in the same community	<input type="radio"/>						

The following scenario is a hypothetic situation.

Suppose the Navy replaces the current DHRB program with one that uses an auction-based system to determine the bonus amount for a specified number of contracts

This auction-based format would work in the follow manner: Suppose there are 100 SWOs eligible to receive retention bonuses and the Navy announces it will seek to retain 60 of those SWOs. Each SWO would individually and privately submit a bid with the minimum bonus amount he or she would be willing to accept in exchange for agreeing to complete two “Department Head Tours.”

The Navy would compile all the bids and award the bonuses to the 60 SWOs with the lowest bids, but it would pay each of them the amount listed in the 61<sup>st</sup> lowest bid (e.g., if the 61<sup>st</sup> lowest bid was \$75,000 then the 60 winning SWOs would each receive \$75,000 even though each had offered to accept a lower amount). The remaining SWOs would not receive bonuses and would not be obligated to serve a “Department Head Tour.”

This auction format is designed to be in a bidder’s best interest to bid truthfully. That is, there is no incentive to “game” the system by overbidding or underbidding.

Assume you are in a group of 200 SWOs eligible to receive a retention bonus. If, under the system described above, the Navy’s goal is to retain 70 SWOs, what is

the amount you would likely submit for your bid (total bonus amount, replacing the current DHRB system)?

Please choose **only one** of the following:

- \$0 / no bonus required
- \$5,000
- \$10,000
- \$15,000
- \$20,000
- \$25,000
- \$30,000
- \$35,000
- \$40,000
- \$45,000
- \$50,000
- \$55,000
- \$60,000
- \$65,000
- \$70,000
- \$75,000
- \$80,000
- \$85,000
- \$90,000
- \$95,000
- \$100,000
- \$105,000
- \$110,000
- \$115,000
- \$120,000

- \$125,000
- \$130,000
- \$135,000
- \$140,000
- \$145,000
- \$150,000
- \$155,000
- \$160,000
- \$165,000
- \$170,000
- \$175,000
- More than \$175,000
- I do not wish to be retained

How well do you feel you understand the auction-based system described above (e.g., who is retained, how bonus amount is determined, how you should bid)?  
Please choose **only one** of the following:

- Clearly understand
- Sufficiently understand
- Somewhat understand
- Do not understand

Please specify the location you would prefer / wanted to be stationed for your first “Department Head Tour”?  
Please choose **only one** of the following:

- Do not wish to serve as SWO DH
- CONUS East Coast
- CONUS West Coast
- Japan

- Rota
- Hawaii
- Other

What is the equivalent cash bonus you would be willing to forgo for the guarantee of serving in your preferred duty station?  
Only numbers may be entered in this field.

Please write your answer here:

The following situation is hypothetical.

You can choose an alternative "Career Chart" from the following options in conjunction with the "SWO Bonus":

- Accelerated Warfighter [Warfare Tactics Instructor, or WTI]
- Enhanced Readiness [First Shore duty, or specialized training/teaching/NPS/civilian grad ed]
- Accelerated Skillset Building [delay 2<sup>nd</sup> sea duty to allow advanced skillset development at O-2 time]

However, if you choose one of these options, you would be asked to give up a portion of your bonus.

Consider each option individually. How much of the "SWO Bonus" would you be willing to give up to be guaranteed the \_\_\_\_\_ Career Chart?

Amount of bonus willing to forfeit to be guaranteed \_\_\_\_\_  
Career Chart

Accelerated Warfighter

Enhanced Readiness

Accelerated Skillset  
Building

What is the equivalent cash bonus you would be willing to forgo for the guarantee of choosing an alternative Career Chart as listed in the previous question?

Only numbers may be entered in this field.

Please write your answer here:

In addition to the two options listed in previously (preferred duty station and alternate Career Chart), is there any other non-monetary incentive that might

increase your willingness to stay in the Navy after completing your initial service obligation?

Please write your answer here:

The Military Compensation and Retirement Modernization Commission (MCRMC) made recommendations for the military retirement system that will be implemented in 2018. One cash payout portion of the report includes a continuation pay that will be dispersed at Year of Service (YOS) 12. This bonus will equal 2.5 times monthly basic pay, plus a potential additional pay to be provided by service, with an associated obligation to remain on active duty for four more years.

At YOS 12, you expect to be an O-4. In 2016 dollars, you expect a monthly base pay of \$7,081.50, meaning the minimum continuation pay amount would be \$17,703.75.

Assuming your continuation pay offered at the 12 year mark is \$18,000, how likely would you be to accept the bonus in exchange for a 4 year commitment?

Please choose only one of the following:

- Very Unlikely (<15% chance of accepting the bonus)
- Unlikely (16%-30% chance of accepting the bonus)
- Somewhat Unlikely (31%-45% chance of accepting the bonus)
- Neutral/ Uncertain (46%-55% chance of accepting the bonus)
- Somewhat Likely (56%-70% chance of accepting the bonus)
- Likely (71%-85% chance of accepting the bonus)
- Very Likely (>86% chance of accepting the bonus)

What is the minimum amount you would accept to stay for the 4 year obligation?  
Only numbers may be entered in this field.

Please write your answer here:

Are you aware of the SWOCS Bonus, which is offered after completing two Department Head tours (at about the 12 YOS mark), totaling approximately \$46,000 paid over 3 years?

Please choose **only one** of the following:

- Yes
- No

The following is a hypothetical situation based on a \$75,000 DHRB contract.

The current bonus structure offered to SWOs is a combination of DHRB, continuation pay, and SWOCS. The payout schedule is below, presuming continuation pay is the minimum and SWOCS is on a multi-year contract:

Bonus Amount	Years of Commissioned Service									
	4	5	6	7	8	9	10	11	12	
	DHRB	\$10,000	\$10,000	\$10,000	\$15,000	\$15,000	\$15,000			
	SWOCS							\$22,000	\$12,000	\$12,000
Continuation Pay										\$18,000
Total Payout Over Time: \$139,000										

Assuming this payout schedule and amounts, and you were to accept DHRB, continuation pay, and SWOCS, would you prefer the current payout schedule or a one-time lump sum payment at the first opportunity?

Please choose only one of the following:

- The Current Schedule
- One-time lump sum (specify the amount in the next question)

If you chose "One-time lump sum," what is the minimum amount you would accept?

Only numbers may be entered in this field.

Please write your answer here:

DHRB and SWOCS are linked to points in the SWO career, specifically post-Division Officer tours and post-Department Head tours. Continuation pay is paid at the 12 YOS mark for all of DoD, with a minimum amount of approximately \$18,000 and a changing upper bound from year to year depending on your community's retention needs.

Which bonus most affects your choice to be retained?

Please choose only one of the following:

- DHRB
- SWOCS
- Continuation pay

## 5. Career Background

### FIRST DIVISION OFFICER TOUR

The following questions are in regard to your first Division Officer Tour:

What is your parent community?

Please choose only one of the following:

- DDG
- CG
- FFG
- LSD
- LHA
- LSD
- LPD
- MCM
- PC
- RIVERINE
- Other

Where were you stationed / homeported for your first Division Officer Tour?

Please choose only one of the following:

- HAMPTON ROADS
- MAYPORT
- ROTA
- BAHRAIN
- SAN DIEGO
- YOKOSUKA
- SASEBO
- HAWAII
- EVERETT
- SINGAPORE

- Other

What department did you belong to for the longest amount of time during your first Division Officer Tour?

Please choose **only one** of the following:

- ENGINEERING
- OPERATIONS
- COMBAT SYSTEMS
- WEAPONS
- DECK (AMPHIB)
- ADMINISTRATION
- NAVIGATION
- SUPPLY
- Not yet assigned a division
- Other

How many months onboard did it take for you to qualify as a Surface Warfare Officer (SWO)?

Please choose only one of the following:

- 9-11
- 12-14
- 15-17
- 18-20
- 21-23
- 24 or greater
- Not yet qualified as SWO

How many total hours were you questioned by Department Heads/XO/CO in a formal setting for your SWO board before qualifying (do not count murder boards or pre-boards)?

Please choose only one of the following:

- 1-2
- 2-3
- 3-4
- 4 or more
- Not yet qualified as SWO

Rank how the CO who qualified you SWO was considered in terms of rigor:  
Please choose only one of the following:

- Very difficult to qualify
- Somewhat difficult to qualify
- Neutral
- Somewhat easy to qualify
- Very easy to qualify
- Not yet qualified as SWO

Did you receive a Department Head recommendation by the end of your first Division Officer Tour?

Please choose only one of the following:

- Yes
- No
- First tour not yet complete

If you were to rank your professional quality against your peers, what tier would you fall into?

Please choose only one of the following:

- Top 5%
- Top 10%
- Top 25%
- Top 50%
- Top 75%

## SECOND DIVISION OFFICER TOUR

The following questions are in regard to your second Division Officer Tour:

What is your parent community?

Please choose only one of the following:

- Not yet assigned a Second Divo Tour
- DDG
- CG
- FFG
- LSD
- LHA
- LSD
- LPD
- MCM
- PC
- RIVERINE
- DESRON
- Other

Where were you stationed / homeported for your second Division Officer Tour?

Please choose only one of the following:

- Not yet assigned a Second Divo Tour
- HAMPTON ROADS
- MAYPORT
- ROTA
- BAHRAIN
- SAN DIEGO
- YOKOSUKA
- SASEBO
- HAWAII

- EVERETT
- SINGAPORE
- Other

What was the highest qualification you earned by the end of your second Division Officer Tour? The list below is constructed from lowest to highest qualification.

Please choose only one of the following:

- Not yet assigned a Second Divo Tour
- OOD
- CDO
- SUWC/Air
- EOOW
- TAO (non-AEGIS)
- TAO (AEGIS)
- Other

What was your billet during your second Division Officer Tour?

Please choose only one of the following:

- Not yet assigned a Second Divo Tour
- NAV
- ASWO
- FPO
- FCO
- DCA
- TRAINO
- MPA
- NGLO
- Staff

- OTHER
- Other

How many deployments (>90 days) have you completed?  
Please choose only one of the following:

- 0
- 1
- 2
- 3
- 4
- 5
- Other

Demographics  
What is your designator?  
Please choose only one of the following:

- 1110
- 1160
- Other

What is your Year Group?  
Please choose only one of the following:

- 2000 or prior
- 2001
- 2002
- 2003
- 2004
- 2005
- 2006

- 2007
- 2008
- 2009
- 2010
- 2011
- 2012
- 2013
- 2014
- 2015
- 2016
- Other

What was the calendar year that you qualified as SWO (i.e., "pinned")?  
Please choose only one of the following:

- Not yet a qualified SWO
- 2007 or prior
- 2008
- 2009
- 2010
- 2011
- 2012
- 2013
- 2014
- 2015
- 2016

What is your current paygrade?  
Please choose only one of the following:

- W-2
- W-3
- W-4
- O-1
- O-1E
- O-2
- O-2E
- O-3
- O-3E
- O-4
- O-5
- O-6

What was your commissioning source?  
Please choose only one of the following:

- USNA
- NROTC
- OCS
- STA-21
- Other

What is the highest level of education you have completed?  
Please choose only one of the following:

- Associate's Degree
- Bachelor's Degree
- Some Postgraduate Education
- Master's Degree
- Doctorate

- Other

Please select any additional qualifications / experience you have earned (select all that apply):

Please choose all that apply:

- CDO
- JPME
- OOD
- SWO Pin
- TAO
- WTI
- Flag Aide
- GSA / IA
- Other:

What is your gender?

Please choose only one of the following:

- Female
- Male

What is your marital status?

Please choose only one of the following:

- Single / Never Married
- Married / Civil Union
- Divorced / Separated
- Widowed
- Other

Have you ever failed a PFA (either BCA or PRT portion)?  
Please choose only one of the following:

- Yes - Specify how many
- No

Make a comment on your choice here:

Please add any additional comments you wish to share with the researchers:  
Please write your answer here:

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